

How can advancement systems in MMO games be categorised?



ABSTRACT

Whilst Massively Multiplayer Online (MMO) games have been studied in some aspects, many aspects of their gameplay are unexplored in prior literature. This study examines the different types of advancement in the mechanics of these games, drawing on prior research in this field and in related fields such as gamification. The literature review is combined with examining three chosen case studies to identify the types of advancement system.

Attention is given to the gameplay and player's interaction with the systems, while a range of factors are identified such as the phase of the game the system is relevant to, the types of limits on progression and other attributes of these systems such as gamification.

Each case study has their advancement systems identified and classified, and further studies which might be undertaken given this classification now exists are identified and briefly discussed.

Table of Contents

ABSTRACT.....	1
INTRODUCTION	3
LITERATURE REVIEW	5
METHODOLOGY	9
CASE STUDIES.....	10
World of Warcraft.....	10
Guild Wars 2.....	12
Warframe	14
DISCUSSION	19
ANALYSIS	25
CONCLUSION	30
Appendix A – References.....	A
Appendix B – World of Warcraft, Burning Crusade Expansion Gating	F

INTRODUCTION

Massively multiplayer (MMO) games are a large and important genre of modern games. Player behaviour and progression in their social cooperative and competitive environments has been widely studied, but the mechanics of these games far less so. Bartle's (2003) *Designing Virtual Worlds* is an excellent resource for virtual worlds, but does not address many of the newer conventions and systems which entertainment focused MMO games have added since the book's publication.

MMO games are extremely expensive to develop – RIFT (2011) cost 50 million dollars (Trion Worlds, (Graft, 2011) and Star Wars: The Old Republic (2011) cost 150-200 million dollars (Cifaldi 2012), but failures in development are common, even for sequels to well established games. The early market leading Everquest series (Woodcock, 2006) saw the third game, Everquest Next (2016) cancelled before launch and Final Fantasy XIV's (2010) initial launch was a disaster (Taljonick, 2014). The game was reworked extensively to make Final Fantasy XIV: A Realm Reborn (2013), which used essentially a new game design and setting (Lin, 2015).

Other released games simply did not perform as well as their creators expected, and after some years of low levels of support were taken offline – Messner (2016) lists ten of these. Despite these failures, many companies are investing in the development of MMO games; MMORPG.com (2019) lists 56 and this is by no means comprehensive. There is, thus, a demonstrated need to help MMO game developers avoid development pitfalls and to develop better products with better player retention.

One approach to reducing the market risks of developing MMO games would be to examine the social and marketing approaches to these games, and other papers have done so. Player progression in particular has a vast amount of research – Sunton (2016) identifies no less than 45 journals carrying content from this area of research. While clearly an active area of research, other approaches have languished with little attention and untapped potential. This paper therefore takes a different approach in addressing the issues in the MMO genre, utilizing a perspective which is focused on gameplay and the character, not the player to explore one of those regions. Specifically, using a shared set of terminology is a common and necessary approach and Altizer & Zagal (2014) states the increasingly important need to do this with gameplay systems, specifically advancement systems, which this paper seeks to do, encompassing both existing terms and some new terms based on the existing literature and case studies.

This focus on character progression means that player progression, and its wide base of existing literature, will only be discussed when it directly impacts on character advancement. Further, the focus of this paper is primarily on player versus environment (PvE) focused gameplay and games. Some player versus player (PvP)-focused MMO games have formerly existed such as Shadowbane (2003) and Dark Fall Online (2009) but unlike other currently popular genres such as Shooters and Battle Arenas, they have not enjoyed widespread commercial success. Other MMO games with PvP scale characters to an identical or near-identical power level in this content, meaning there is no advancement to study.

The core systems of character progression are especially interesting in MMO games, as they are designed for long-term play. Non-Massively multiplayer RPG's such as Neverwinter Nights 2 (2006) or The Witcher 3 (2015), are considered long with a single playthrough for many players in the region of 60 hours (HowLongtoBeat,2019). While these share many of the basic mechanical progression systems which will be discussed in this paper such as levels and gear, they build to a conclusive "boss" monster fight without the need to play for ongoing play. They are designed to be completed without the need to entice the player to play – and pay – for the game and extras over years of real time.

Players commitment and retention to MMO requires the game set intrinsic goals (Bartle, 2003). The extended play needed in these games goes beyond the common levelling progression mechanics of single or multiplayer games to, per Brown (2013), an "Endgame". The balance of difficulty and progression is important for retention but currently it is often not clear in games from external documentation which of many gameplay systems are involved in the Endgame.

This paper will thus review a range of literature to identify the types of advancement systems present, looking at case studies of major games to identify examples of these types and analysing the results. The chosen case studies are;

- World of Warcraft (2004), both Battle for Azeroth (2018) and Classic (2019)
- Guild Wars 2 (2012)
- Warframe (2013)

LITERATURE REVIEW

When the literature was reviewed for a definition of a MMO game, several definitions of Massively Multiplayer Online (“MMO”) games were found in game studies, each with their own focus. This study draws its working definition directly from Steinkuehler (2004);

Massively multiplayer online games (MMOGs) are highly graphical 2- or 3-D videogames played online, allowing individuals, through their self-created digital characters or “avatars,” to interact not only with the gaming software (the designed environment of the game and the computer-controlled characters within it) but with other players’ avatars as well. These virtual worlds are persistent social and material worlds, loosely structured by open-ended (fantasy) narratives, where players are largely free to do as they please—slay ogres, siege castles, barter goods in town, or shake the fruit out of trees.

Utilizing this definition, other literature concerning MMO advancement systems was located.

Altizer and Zagal (2014) helps define the nature of progression in games with several criteria – that it is normal and expected as part of the genre and that players experience with them changes over time played; multiple advancement systems are expected. It also defines progression as both irreversible and cumulative. Not all activities are, thus, progression activities; a player gathering materials to keep character’s castle in good order is not progressing instead carrying out a maintenance activity.

Some types of game mechanics, which are not progression mechanics, can this be ignored for the purposes of this paper and also while advancement does not necessarily mean character power as there are systems such as achievements which grant no direct reward beyond a “score” of achievement points. Both WoW and GW2 have extensive achievement systems but these systems do not offer boosts to character power, are poor at gratifying many players (Irwin, 2009) and as such will not be considered advancement systems for this study.

In *Designing Virtual Worlds* (Bartle, 2003), several chapters are dedicated to issues surrounding advancement. The book identifies a number of advancement mechanics including levels and crafting. Other mechanics discussed such as attributes and skills are usually not separate advancement mechanics in modern MMO game worlds.

Levels are a classic form of game advancement dating back to pen and paper roleplaying games, specifically *Dungeons and Dragons* (Arneson & Gygax, 1974), and are driven by “experience” gain from both quests and killing enemies. They act as a time investment – a gate, or gating mechanic – to the availability of many other advancement mechanics in games. The differences between this “levelling” phase of the game and the extended gameplay after this, at maximum level, are discussed in Brown (2013). The mechanics added at maximum level to

establish new and vastly extended progression paths make this a separate phase of play called the “end game”.

The nature of crafting in MMO games is quite consistent – the complex real-world processes are reduced to two phases, gathering and making. Materials may be gathered from slain enemies, “nodes” the player can interact with in the world or via trading with other players. These materials are then combined in various ways in crafting to create gear. Occasionally there are intermediate steps in processing materials but only rarely are more involved mechanics or limits invoked – Asheron’s Call (1999) had per-player unique “spell recipes”, for instance.

A further important type of advancement is character equipment, or “gear”. Examples of these are laid out in Wowpedia (2019) and ArcheAge Wiki (2019) which are typical of MMO genre resources. Gear “slots” which relate to body parts of the character grant the player various statistical bonuses and/or powers from the gear placed into them. The amount of these bonuses, and the powers available, are generally related to the level of the gear which is in turn usually associated with the character’s level. Gear which is more powerful is either progressively rarer or achieved only via harder game content, and is often organized into visual “tiers” for user interface purposes. Many modern MMO’s have taken to displaying an “item level” or “ilevel” which indicates the power of a piece of gear.

These wikis also detail the factions of their game, and Altizer and Zagal (2014) detail the gameplay details; the player can gain reputation with factions via deeds in the game and this then unlocks rewards for the player. This is typically using tiers which the player must gain progressively more reputation to unlock.

A further form of progression, one focused on players rather than characters is story progression, as discussed by Carstensdottir, Kleinman and El-Nasir (2019). In this paper, the interaction of progression mechanics with the story are examined and while it focuses on how gameplay elements can be required to progress the story it also shows that the story can be used to gate progression elements, requiring the story be advanced to allow further character progression.

With these types of system identified, the structure of the progression system can be examined. As discussed by Lauro (2014) progression can be either horizontal or vertical. In vertical progression, the character’s advancement is a “vertical climb” – going up a ladder of gaining power to directly take on more challenging content. By contrast, in horizontal progression the advancement systems are more like a “non-linear narrative” in that the character gains access to a wider variety of options – this can be in terms of gear, abilities or even access to world

locations. These are not absolutes, and games and even systems blend these types of orientation.

A discussion of an “end game” progression mechanic comes in Rowlands (2010), which is a detailed ethnography of the early MMO EverQuest (1999). The paper discusses the first MMO Alternate Advancement (AA) system, specifically named “Alternate Advancement” which was introduced to EverQuest in 2001. This is a system allowing the player to gain experience at maximum level, and put points gained from this into a progression tree. AA is shown as a way to extend the game for players. It also discussed how players, both of that character and other players, partially measure their characters worth via progression in AA.

Brown (2013) also mentions Everquest’s AA and how the system is used to gate content progression – to access the progressively higher tiers of end-game content requires the player to have spent considerable amounts of time on progressing via repeated actions, known as “grinding”, sufficient levels of AA. The paper discusses this, and in broader terms how advancement systems availability in the maximum level “end game” is critical to retain players – commenting critically on the original World of Warcraft’s endgame in terms of only having gear options for advancement and no AA system.

A further topic addressing types of advancement systems in a lot of games literature is gamification, specifically that some gameplay systems can be “Gamified”; Hamari & Huotari (2012) define gamification as *"a process of enhancing a service with affordances for gameful experiences in order to support user's overall value creation"*. This looks at the systems purely in terms of “value” which when examined from the perspective of MMO games primarily addresses player retention.

Kominiarczuk (2015) further discusses, in the context of this definition, how game systems can be “gamified”, and defines gamified systems as being distinguishable from “core” game systems. The chapter discusses as an example the gamified “meta-game” added to several Blizzard Entertainment (2019) games, such as Diablo 3’s (2012) “paragon” system, similar to Everquest’s AA. The system was added in a patch and only takes effect at maximum level, which is not reached in a single character’s play-through of the Diablo 3 story. It also has its own separate UI tab separate from the standard character statistics tab. These characteristics are discussed to identify it as gamified.

Nicholson (2014) is also relevant to gamification and discusses how gamified systems work around “points” of relevance only to the system itself. It does this in the context of World of Warcraft (2004), indicating that gamified advancement systems encourage shallow play sessions and harm engagement and hence retention over the longer term.

There is also evidence in the games press, although rarely discussed outside player agency for MMO games in studies, of other types of repetitive gameplay. For instance, Royce (2015) discusses “daily” quests, encouraging a certain amount of daily play, and Royce (2018) discusses how bonuses to certain types of gameplay based on real-world time can control how players experience the game. In a broader sense, “holidays” where additional progression mechanics are added, often separate from the main gameplay are common in games – for instance, as described on WoW Gamepedia Event, n.d.)the BfA version of World of Warcraft has 12 major “holiday” events of a week or more, all with their own seasonal currencies and rewards.

Retention of MMO players is discussed by Debeauvais and Yee (2014) examining World of Warcraft during its Cataclysm (2010) expansion, they found a very high turnover in the player base, specifically that many players returned for major patches adding content, but left again shortly afterwards. The next expansion, Mists of Pandaria (2012), had far more frequent content but retained a high rate of players starting and stopping players – the “churn rate” remained high. In this case, simply adding content on a more frequent basis did not improve retention.

This can be at least partially explained by Duchenaut, Yee, Nickell & Moore (2006) where the consumption of content in the pre-expansion World of Warcraft are categorized and discussed. They found a jarring transition from the primarily solo play of levelling to the mandatory group-based end-game phase of the game both for players and in terms of the relevant game mechanics. In fact, only 30% of maximum-level players managed to engage with the content in this version of World Warcraft. The accessibility of progression mechanics and how they are introduced to players is thus relevant.

There is extensive work on the psychology of MMO rewards, such as Yee (2007) More frequent rewards can lead to higher engagement in a given advancement system, and the difference between fixed and variable ratios of reward are discussed; giving chances for a reward can be more engaging compared to fixed rewards, but also lead to frustration at low chances.

METHODOLOGY

This is a qualitative study which is dealing with observed categories of advancement system, which will examine several case studies to identify individual advancement systems for classification. It takes a strictly ludological approach to games studies as it is dealing with character advancement and is concerned with narrative only in so far as it affects advancement mechanics.

The use of case studies to examine game advancement systems is extremely common. One example is in Altizer & Zagal (2014) which examines systems using the pen and paper RPG Dungeons and Dragons and in multiple studies by authors such as Nick Yee whose MMO research focuses primarily on Everquest, some of which are examined in this paper.

The case studies in question were chosen based on several criteria. These are; extensive documentation, games market significance and business model, to examine a range of different types of MMO game and the personal experience of the author of the games in question. This last matters because it is often difficult to interpret the documentation, especially wiki based documentation, and even recorded videos of games without direct experience of the interactions of the gameplay systems involved. The value of this experience in game studies is widely discussed, for instance in Brown (2013) and Rowlands (2010) and the case studies chosen are a distinct subset of the author's wide experience in the genre.

Each case study will be examined from its own official documentation, including in-game documentation, user-written documentation to include wikis, player articles and critical media articles, papers written on the game and the author's experience with the game. The case studies will restrict themselves to identifying and describing the advancement systems rather than immediately categorizing them, both for the current version of the game and for any significant prior versions or expansions of the game.

Drawing on the Literature review, the identified advancement systems will then be discussed and classified into a taxonomy. Where needed, additional examples of major types of advancement systems will be identified and discussed from other significant MMO games. The advancement mechanics for each case study will be identified, according to the paper's classifications, as an example for future development of MMO games.

The factors examined will include when the systems are available and relevant to progression, the vertical or horizontal orientation of the systems, how players are limited in progression in the system and any further factors such as gamification. The paper will conclude by briefly examining how utilising this data could aid in boosting retention.

CASE STUDIES

World of Warcraft

World of Warcraft (WoW) is a fantasy PvE focused MMORPG developed by Blizzard Entertainment (2019) and has been selected as a case study for this paper as it is the market leading (Guest, 2019) MMO game. Two versions of the game are currently available, “Battle For Azeroth” (BfA) (2018) and the WoW “Classic” version (2019) which recreates the game as it existed in 2005-2006. Both of these, and some of the intermediate expansions between these, are of interest. WoW uses a subscription business model.

Common to the active versions is a traditional RPG levelling system and a gear system where you can acquire gear from both slaying enemies and crafting. Many, but not all, crafted items can be traded. Both versions also have reputation systems, where you complete quests and/or kill certain enemies and after passing certain thresholds unlock the ability to buy more gear. Some gear can be “enchanted” with additional stats, using crafting – this can be done to a player’s gear by another player.

WoW has a measure of the power of items displayed to players named “ilevel” and an increase of 1 in ilevel is approximately a 1% increase in power. Even within a single expansion such as BfA the lowest tier and difficulty of “raid” gear has an ilevel of 340 and the highest has an ilevel 475 (Wowhead, 2019), a 40% increase. This sort of change is seen in WoW inside every expansion (Anshlun, 2018)- there is a very sharp and noticeable increase in character power. New, harder content is introduced in each major patch and there are “catch up” mechanics provided, enabling players to rapidly gain a baseline set of gear which enables them to play the new patch content.

In BfA, new powers are gained automatically as the player levels, and these scale with the character as his level rises. There is a “talent” system, which is unlocked purely by levelling – allowing you to select one of three powers from each of seven tiers. Thus, these are not separate advancement systems.

BfA also has a “Titanforging” element of the gear system which allows gear from seventeen of the twenty-one available equipment slots to randomly improve in value via various random bonuses or a higher ilevel, meaning even initially identical rewards may increase a character’s power. The random nature of these bonus – approximately 15% for each of the three available types - encourages repetition of content in the game, as loot which may not initially seem an upgrade can randomly become more powerful (BellularGaming, 2016).

The other four gear slots do not use this Titanforging system, but are linked instead to the expansion-specific “Heart of Azeroth” system, which is also an item equipped in the neck slot. A specific experience system of “Azerite” levels rewarded from many quests levels this, increasing its power and unlocking powers on “Azerite Gear” in the other three slots. The player can choose one power from between three and six in each of four “rings”, the selection of these depending on the specific gear piece, the character’s chosen role in battle and the location the gear was acquired from. These powers are passive or modify existing powers. Selling “Azerite Gear” a player does not want gives a currency which, in large quantities, allows players to buy a specific piece of “Azerite Gear”.

In the “Rise of Azshara” content patch in June 2019, a further addition was made to the “Heart of Azeroth” system which allows a selected active power to be added, as well as new passive powers to be used. Each of these new powers has its own unlocking requirements, for each of its four ranks. These unlocks are deliberately spread through the entire content of the patch and wider game.

The story also gates access to many game features – each of the two factions has its own area of the game world and access to the other area and bases there are unlocked via the “War Campaign”, the main story element of BfA. Zones added in patches and several of the 5 man cooperative “dungeon” instances are also tied into these missions.

There is a “Minion” system which is used to progress the story and to give the player other, minor rewards, using a currency obtained from some quests. Minion mission lengths vary from four hours to three days. This system was introduced in “Warlords of Draenor” (2014), but has been reduced in importance in the following two expansions.

The “World Quest” system gives the player access to a shifting selection of quests in the game world, some of which change every eight hours and some every day. These days reward faction experience and either game currency or gear, and each day a specific “Emissary” quest is available which gives the player a large reward for completing 4 quests for the reputation-faction it comes from. The quantity and power of rewards available scales with the character’s gear.

WoW’s Classic version lacks many of the more complex advancement systems of BfA. Instead, it limits progression through its 25 or 40 “raids” by using the gear, reputation and crafting systems. WoW Classic does, however, also use several advancement systems which no longer exist in BfA. One is skills; Each type of weapon has an associated skill and before it can be used against enemies of the player’s level it must be used repeatedly to strike lower level enemies. This can take multiple hours per weapon type. There is also a “defense” skill which must be levelled by being attacked by enemies.

Another is the need to buy “ranks” of abilities as the character levels up – instead of powers becoming slightly more powerful with every level gained, set levels allow the player to spend a significant quantity of in-game currency to gain a major increase in that abilities power. Some additional ranks exist for some powers at maximum level, usually dropped by hard enemies. WoW Classic also has a talent tree system, where players gain points with level-ups which they can put into a tree allowing character customisation.

The six expansions intermediate between the original WoW and BfA are notable for the large number of changes to their advancement systems, two of which in specific are worth examining. In the “Burning Crusade” (2007), a very complex system of content gating was used, as illustrated in the diagram included in Appendix B. Accessing the “higher” and more difficult raids was lengthy process involving questing, reputations, 5-person and lower tier raids. The second system is that active during the “Legion” (2016), where each chosen battle role received a “Legendary Weapon” characters used through the expansion. This unlocked both active and passive powers from a large tree, which was expanded in patches though the expansion.

Guild Wars 2

Guild Wars 2 (GW2) is a fantasy PvE focused MMORPG developed by ArenaNet (2019) and selected as a case study as it has a variety of interesting advancement mechanics, and a strong ongoing story. The base game is free to play, with two purchased expansion packs, Heart of Thorns (HoF) (2015) and Path of Fire (PoF) (2017). There is a cash store, which sells a variety of items including cosmetics and toys, utility items and story episodes.

GW2 uses a traditional RPG levelling system and a gear system where you can acquire gear from both slaying enemies and crafting. The crafting system predominates at maximum level with a strong emphasis on collecting crafting materials from daily crafting activities, enemies and resource “nodes” in the world. The game world scales players down to the local area or “zone” level, maintaining challenge even for higher level players. GW2 has a strong focus on a central, episodic, story for which the player is the hero.

The crafting system, with a few exceptions, creates tradeable items and provides a range of upgrades, as well as simply gear. These vary from items which can change the statistics of existing items to “enchancing” gear to enhance its statistics. Additional materials for crafting also come from an infinitely repeatable system which rewards the player for filling their “experience bar” at maximum level, and a daily login system which gives a monthly cycle of rewards – primarily tokens and crafting materials. There is also, separately, a daily quest system which

grants rewards when certain content in certain zones is completed, this also grants crafting materials.

GW2 has a wide range of in-game currencies. Some are designed to be rapidly gained and spent, while others are rare and may be saved over several months for a single purchase. Some vendors, rather than traditional reputations, require certain amounts of currency to be spent or specific purchases made to unlock further purchases. In the expansions, it is notable that each zone has its own currency – and in some cases these unlock ability purchases to enable story progression.

The gear system rapidly caps out for most players – it is relatively easy to obtain the “Exotic” tier gear, which give a 175% boost to statistics over the white “Basic” gear. Even armour or weapons crafted by a player’s own professions can be obtained for relatively small amounts of currency from the player-driven auction house. Obtaining even one item of the highest tier – “Ascended” or “Legendary” – gear takes a considerable amount of time (months, typically). In addition, this gear has a relatively small improvement - a 185% boost or a 6% improvement from Exotic armour. Some specific, more powerful, enchants can only be placed on this tier of gear, however.

One specific system worth mentioning is “agony resistance” (AR). This is an upgrade which helps reduce damage taken in one specific 5-man “dungeon” in the game. They begin at +1 AR and can be merged together to be upgraded, each time using two of the same tier; i.e. two +2 AR’s to make a +3, two +3’s to make a +4, etc. This process also takes a considerable amount of in-game currency, doubling at each tier, and players have advanced it as far as +23 AR. Players typically use multiple slots instead, capping at a practical maximum of +10 AR – a set of +10 AR upgraded gear will use ~5000 +1 AR upgrades (less than a single +14 AR upgrade). The +23 upgrade, by comparison, is formed from merging 4,194,304 +1 AR upgrades.

Each class has a number of specializations, with “trait” powers which must be unlocked. At maximum level, the character will be able to unlock all the talent trees for their class but they can choose to unlock them before this by completing “hero point” challenges through the world. These are usually fighting a big monster or reaching the top of a jumping puzzle. At maximum level, player can have three of the seven trait trees for their class active at any time. Several of the choices for traits are one-of-three, while others are fixed.

The “Mastery” system has three “regions” - the base game and each of the two expansion packs - and playing in a given region advances its mastery. Each region has a number of different mastery progression tracks. The player must have sufficient mastery points which are obtained from a wide variety of sources including special locations, achievements for the story and game zones, defeating bosses, mini-game high scores and completing all the quests in a

zone. The player must then gain sufficient experience points to fill the progress bar for the mastery.

Mastery tracks for the base game include minor improvements such as run speed in cities, and more substantial bonuses such as unlocking legendary-tier weapons and boosting performance in certain 5-man dungeons. The masteries for the expansions focus on expansion-specific systems – primarily world navigation, several vendor unlocks and gliders for HoT and mounts for PoF. Story progression in the expansions requires levels of certain masteries.

Is it notable that Mastery was brought in explicitly as a way to give end-game progression (Cox & Hughs, 2015), as the designers of Guild Wars 2 did not want to offer significant end-game vertical gear or level progression (Zadorojny, 2012). The level cap of the game – 80 – has unusually remained fixed despite the fact two expansions have been released and the genre convention of raising the level cap in paid expansions.

Warframe

Warframe is a science fiction PvE focused MMO First Person Shooter developed by Digital Extremes (2019) which encourages cooperative play between teams of four players with “Warframes” as their avatars; the “class” system of the game which allows you to pick a set of special abilities to play with. The Warframe Wiki (2019) is an excellent, if disorganised, guide to the game. Warframe has been selected as a case study for this paper as it is a popular non-RTS MMO game, typically per Steam Charts (2019) being anywhere between the 5th to 12th most played game on Steam (2019) at any time, also having a non-steam PC client and Xbox, Playstation and Switch versions. It uses a free to play business model, with a player-tradeable premium currency and utilizing Steam’s “Workshop” functionality to sell player-created art designs in the game.

The advancement systems of the game are highly interconnected. The players play in procedurally generated missions on the “starchart” gaining experience to level the equipment used and this “affinity” is also applied to the reputation and “focus” systems. During play you gain various currencies, including “credits”, “endo” and “kuva” as well as mods for customizing equipment.

The equipment types used include Warframes, primary weapons, secondary weapons, companions, “amps” (a special weapon type), heavy weapons and “k-drives” (floating skateboards) as well as the “Archwings” with their own guns and melee weapons. Each piece of equipment, there are 528 in the game, can be individually levelled to 30. As you gain experience, each level grants a point of capacity to mount mods which boost various statistics

or grant special modifiers. Some types of equipment also have “aura” or “stance” mod slot which grants capacity and allows more mods to be equipped and there are items to double, once, mod capacity for a piece of equipment. Levelling a piece of equipment typically takes several hours of play.

Mods, of which there are 996, drop from specific types of enemy and may have a common, uncommon or rare rarity. They are specific to a given type of equipment, and are levelled – gaining power cut also taking more points to equip – using the currency “endo” which drops from enemies, specific rewards in some mission types and via removing otherwise useless additional copies of mods.

Each mod has one of six symbols associated with it, called its “polarity”. Maximum level, level thirty, gear can be reduced to level zero and re-levelled when a “forma” upgrade item is applied to it, in return for one of the mod slots – of which there are between eight and eleven on gear – having a polarity applied. Mods which match their slots polarity have their cost halved, while a slot with a different, but not blank, polarity increases cost by half. This process of applying may be repeated when the gear is once again at maximum level, and an example of this can be seen below;



This weapon, a Sobek, has five forma attached, as can be seen to the right of the weapon name and rank. Five of the eight mods have their costs to the top right displayed in green, showing they are in a matched slot and are using half the usual capacity. There are 60 mod points available, and the fitted mods would usually consume 83 points. Forma can thus allow much more powerful items, at the cost of time and resource expenditure.

In addition, “Arcane” items can be acquired – specific types of these can be equipped on Warframes and specific types of weapon. These are not levelled per-se, but the same arcane

can be stacked up to ten times. The acquisition for these is either tied to reputations or gated behind some of the hardest content in the game.

Equipping and levelling different gear - but not revelling after forma usage - grants you “mastery rating”, as does completing the “Star Chart”. The “Star Chart” is a visually collected set of nodes, each a mission with a set mission type and range of enemy levels. These are grouped into “Planets “, which have a “Junction” which must be completed to access the next Planet. There are various requirements both general and specific to the planet they are present on for completing these Junctions, which also grant a large amount of mastery rating.

Additional locations are also present on the star chart, which do not need to be completed but which can give access to additional missions. These are both social shared spaces and the two large “open world” zones of “Plains of Eidolon” and “Orb Vallis” and associated entry cities.

Gear is generally built, over a fixed period of real-world time from minutes to three days, from blueprints using resources. Each Planet’s enemies drop specific resources, which are classified as common, uncommon and rare and they also come from smashable “crates” and openable “lockers”. Some rarer resources are only available in specific mission rewards on certain planets or drop from specific types of enemy.

Most blueprints come from either the in-game market, using credits, or are available via player clans, who can “research” blueprints using resources, while a few come drop drop from specific enemies. However, the more powerful “Prime” gear requires you to acquire specific “relics” from mission rewards, and then run “relic” missions which give you a piece of loot from the relic’s drop table of five items – combining between three and five specific drops then lets you create the final item. In addition, some pieces of gear are rewarded from quests and the “amp” gear type comes from reputations. These systems may be bypassed by spending the premium game currency, “Platinum”, which allows built the gear wanted to be acquired instantly.

Mastery Ranking allows you to increase your Mastery Rank (MR), from the initial 0 to the currently accessible maximum of 28. You may only, even if you have levelled a lot of gear, increase your mastery rank by one per day, and this requires passing a “Mastery Test” designed to test one specific area of the player’s skill. MR is prominently displayed on player’s profile and in game missions, and gates access to some planets, using the more powerful weapons in the game and how much reputation you are allowed to gain each day from every faction.

The same experience system used for levelling weapons also allows you to enter a reputation gain system, the six initially available factions or “syndicates”, by placing a visual marker, a “sigil” on your Warframe which aligns you to a specific faction. This grants the character reputation with the faction as you gain experience but also reduces the “opposing” syndicate’s

reputation. Any given player can, therefore, only generally increase their reputation with two or three of these syndicates, and must trade with other players for the rewards from the other syndicates. Each syndicate has various levels, each of which unlocks access to more rewards.

Additional reputations are also available to increase in the game, which are not directly connected to these base syndicates— these are accessed via either social spaces or the open worlds. They have specific methods of gaining reputation, usually via completing specific, harder, missions.

Warframe has story quests, some of which are optional, but others are sequential and required to complete “junctions” or access gameplay systems such as companions and to obtain some rare equipment. The second open world zone, “Orb Vallis” has a series of quests, the accessibility of which are tied into the reputation system. When completed, these allow access to the boss fights associated with the “Orb Vallis”.

Some gameplay modes, such as the Operator, Archwings and Heavy Weapons and their associated gear are tied behind specific story quests. Operators also unlock the Focus system, where a portion of experience from playing, on equipment which has had a “lens” attached and which allow the player to unlock five progression trees. The player can select one of these trees to be active and may also use a few “unbound” passive powers from other trees, when unlocked. These are a long-term proposition, as there is a daily cap which would typically only be filled by hours of play every day and which would take ~170 days of this, although this can be reduced somewhat by playing specific, hard, missions.

“Riven” mods are also unlocked by a story mission. These weapon mods have two to three random positive – and sometimes a single random negative – statistics and can be placed on a specific weapon. The statistics can be re-rolled using the “Kuva” currency. Players can unlock up to 90 slots for Riven Mods.

Recently, Warframe has added a “Nightwave” seasonal activity – you complete tasks of varying difficulty every day and week to progress along a track which grants you rewards, both cosmetic and gameplay-related, in a series of ranks. Completing ~60% of the activities is needed to gain the maximum rank of 30 in a season and after 14 weeks, a new track is introduced and the ranking reset. Some of these rewards are exclusive to the system – the “Umbral Forma” - while others are rare and expensive to craft in other gameplay. The difficulty of the tasks in this system has undergone rapid reductions since its introduction.

Finally, Warframe has a login system, which rewards daily logins with small amounts of resources, and a major bonus every 50 days; Weapons or mods only available via the login system, and which currently need 900 days of logins to gain all unique rewards. A small

multiplier to the resource system based on days logged in keeps the amounts rewarded relevant to veteran players.

DISCUSSION

As can be seen from the case studies, there are a wide variety of advancement mechanics in modern MMO games. Some of these are common to almost all MMO games, such as the levelling system from Dungeons and Dragons (Arneson & Gygax, 1974), while others have been developed from computer-based multi-user dungeon (MUD) and MMO games. A few mechanics are specific to a sub-genre of MMO games but while they may require additional type descriptors it is still possible to classify these mechanics into the main categories proposed in this paper.

From examining Rowlands (2010) and Brown (2013), there are distinct levelling and endgame phases of play. There is a need to define advancement relative to these, as some types of advancement systems are relevant in one or both. Levelling, for instance, is generally relevant only in the levelling phase while “alternate advancement” systems are only relevant in the endgame. Gear systems typically span both levelling and the endgame.

The term “Endgame” is also complicated further by the fact that it is not always directly equal to obtaining the maximum level – and is a changing definition. For instance, WoW releases expansion packs which raise the level cap slightly. Each new expansion adds specific mechanics which are removed or minimised in relevance in the new expansion, and these mechanics which are introduced during this period are essentially a tutorial for the maximum level experience players soon return to. When a new expansion is released, however, players will typically rapidly level past these expansion-specific mechanics with little engagement.

The key here is therefore relevance and looking at when the player actively engages with the system. Another good example is GW2’s login advancement reward system, which allows the player to claim rewards on a daily basis. While this is based on a fixed monthly reward cycle, the significant rewards in terms of currencies and crafting materials are only relevant and indeed cannot be used until a game’s maximum level has been reached and the advanced levels of crafting have been unlocked. Lower level characters may accumulate these materials but they cannot use them and little engagement is again generated.

A further complicating factor is that in some cases, it makes sense to split what might initially look like a single system into two. For instance, the very different nature of the gear system when levelling and when in the end game when considering GW2. In levelling phase there is a fairly standard progression of gear, with routine upgrades, while the endgame phase has the player expending major efforts for very minor upgrades compared to other comparable games like either WoW version or The Elder Scrolls Online (2014).

Another example of this complication is that in WoW where there are significant differences between the available versions. In BfA the questing experience extends well into the end game with only slight changes, but a second advancement system using quests, “World Quests”, is introduced in the endgame. In WoW Classic there are essentially two questing systems – one which enables levelling and a second and far slower endgame system tied to progress in 40 player “raid” content and with significant rewards.

Given these factors, there are three types of advancement which all advancement systems can thus be categorised into based on if they are relevant during the levelling phase, the endgame phase or both in their game. These are as follows;

Initial Advancement (IA). These are progression systems which the player only engages with during the levelling phase of the game. The classic example of this is the levelling system itself, the examples given above with the GW2 gear system, WoW Classic quest system and story advancement in RIFT – players can bypass the access limits placed via that advancement system when they reach maximum level.

Alternate Advancement (AA). These are progression systems which the player only engages with during the endgame phase of the game. This also include game expansion-specific systems. This includes Everquest’s AA, WoW’s expansion-specific systems such as the Legendary Weapon, Heart of Azeroth and Minion systems as well as systems in RIFT (2011) such as Elemental Attunement and Eternal Weapons and GW2’s mastery and login systems.

Primary Advancement (PA). These are progression systems which the player engages with through both the levelling and endgame phases of the game. These are not that common, but are generally important in terms of retention. Gear in most MMO games fits this category, as does Warframe’s login system.

As discussed, per Lauro (2014), advancement can be vertical or horizontal. This is something which can and will be studied for both a game’s overall and individual advancement systems. The orientation of a system is usually clear, although in a few cases a system can be both. For instance, “World Quests” in World of Warcraft have one of their reward types, gear, scale with the character’s power – this is vertical scaling. They are also spread between all the world areas added in that expansion, requiring the player to revisit them and it is thus also a form of horizontal advancement.

Advancement can also be examined in terms of how characters are limited in their rate of advancement. Without limits, players would immediately complete their advancement and the methods by which these limits are imposed are thus critical to understanding the systems. The major factors affecting this include time and agency, defining a range of different limits on

systems. Systems can have several different limiting mechanisms, either at once or at different points in their advancement.

The first of these is experience, which takes a variety of forms. Many game systems only become available when character levels, directly gained through experience, are reached. WoW and GW2 both allow low level characters a very limited range of abilities, and unlock further abilities as experience leads to the player gaining levels. In Warframe, the ability to fit mods expands as the gear gains level and RIFT (2011) unlocks several systems such as the high-power “Legendary” weapons and abilities based on level.

Experience remains relevant at maximum level, however, for many games. In GW2, maximum level characters receive a bag of crafting materials at a set amount of experience points gained, this being infinitely repeatable. The importance of experience-limits is thus that they are unconditional. Some players may play better than others or choose more optimal strategies for gaining experience for their character, but when enough experience points are gained, the effect – if gaining a level or a bag of crafting materials – occurs.

Some other advancement systems can be defined as a subtype of experience-limited systems, and can be called conditional experience-limited. Warframe has several examples of these, for instance the “Mastery Rank” system of Warframe. Players gain mastery when new gear is levelled, but not when gear is re-levelled using a forma. Other advancement systems in Warframe such as reputation and focus also have a daily cap, and hence are also conditionally linked to experience. The gains from experience in these systems are not unlimited, being subject to other game rules and are hence conditional.

A further limit is currency-limiting. Game currencies are gained via gameplay actions and are not items in the game, being markers in the game user interface. Examples of this include increasing the power of Warframe’s mods with the “endo” currency, and WoW BfA’s “azeroth power” currency. In both cases, how much currency is gained depends on the type of actions the player has undertaken. Progression is based on the choice of actions which the player undertakes, and how efficiently they undertake those tasks.

A related but separate limit, often tied to reputation systems, is grinding. This is where the player kills specific types of enemy mobs or completes a repeatable mission over and over. This may either give a small guaranteed reward or a small chance of a larger reward such as a piece of gear. How fast the advancement or chance for advancement depends on how efficiently the character can kill the mobs or complete the mission. Another example is gathering materials for crafting, where killing the enemies who drop the required resources or searching for the nodes which grant the resource is a repetitive, specific action.

Crafting systems are typically resource-limited. That is, advancement in these systems depends on how many in-game resources, collectable items in the game, are available. A maximum level character in WoW or GW2 may change professions and achieve maximum level in their new one via using guides such those on WoW-professions (2019) very rapidly, if they have sufficient materials available. If the player does not initially have these materials, their rate of advancement is entirely dependent on obtaining these materials.

Some systems simply require a certain period of player-triggered real-world time before allowing progression, can be considered time-limited. Crafting in Warframe partakes of this, along with minion systems as found in WoW:BfA and RIFT (2011) and login systems in Warframe and GW2. A further example is limited-availability recipes in WoW Classic – one person may purchase them from a vendor, then a set amount of time passes before another copy becomes available.

Another form of limit is capping, where only a certain amount of progress is allowed in a given period of time. This differs from time-limiting in that it is based on absolute periods of real-world time and not player-triggered periods and there may either be a fixed reward or a set chance for a reward. In Warframe, reputations and focus have a daily cap and in WoW BfA only a certain number of World Quests are available to advance any single reputation in any given period. Some major loot and reputation systems in both WoW BfA and Classic are also based on capping, as each large “boss” enemy in 10-40 player “raid” PvE content are only available once a week for each character. Each “boss” defeated grants a chance to obtain gear to advance the character, but this then “locks” the from the boss and removes this chance until the weekly reset (Takralus, as quoted by Velosh (2016)).

There is also availability-limiting; both WoW BfA and Classic reputation systems only allow a certain amount of progression on reputations by completing quests. A character can complete all the quests for that faction in the game, and hence exhaust the availability of this type of progression. Story quests are also availability-limited; While both Warframe and GW2 allow quests to be replayed, the advancement rewards from quests are only available on the first completion. Quests once-off experience rewards in many games are also often a significant part of level progression.

The full list of types of advancement limits are thus; experience, conditional experience, currency, grinding, resource, time, capping and availability.

A further category is that of rewards. How frequently rewards are offered can change how players interact with systems and the time periods that this study is concerned with are hours (including shorter time periods), days, weeks and months. From previously discussed examples of content, levels are typically gained in hours, login rewards come on a daily basis, “raid” loot

can be obtained once per week per boss in WoW and high end currencies in GW2 are gathered and spent over a period of months. Some of these may require player effort and others do not – this is not relevant to this particular categorisation, as it is only concerned with the reward itself.

The final differentiation of advancement systems is fixed and variable ratio rewards. Fixed ratio systems provide rewards to players on a regular basis, such as login rewards systems. Some of these login rewards are often minor, but are still given on a regular basis, making the system provide a fixed ratio of rewards. This differentiates them from systems which have a chance of not rewarding the player, variable ratio systems. Systems which might vary in competition time but give a progression bar, such as levelling, can be treated as fixed ratio systems.

In addition to these broad categorisations of advancement systems, there are a number of individual classifications or tags which can be applied to certain advancement systems, which are descriptive of their function. These are frequently equivalent systems in several games and indeed they would not be included unless systems deserving these classifications can be identified across several games. The first of this is gamification, and the gamified classification.

Kominiarczuk (2015) and Nicholson (2014), as discussed in the literature review, lay out that gamified systems can be distinguished and their major characteristics. Two types of commonly found MMO advancement systems clearly meet the definitions in this paper, these being minion and login systems; They are tied to real-time and integrate poorly into core gameplay systems.

Login systems reward players for simply launching the game on a daily basis, and are very common in the industry; WoW is unusual in that it does not offer one. GW2, Warframe and other titles such as The Elder Scrolls Online (2014) do so and while they give rewards which are relevant to the remainder of the game the player is unable to affect how they are rewarded except via logging in every day. This can be contrasted with the daily quest system of GW2, which gives a reward for completing some set activities, and thus requires far greater agency.

Many rewards are also unique to login systems. GW2's "laurel" currency, gained only via logins, is needed for some vendors, and which thus heavily time-gate acquisition of the high-end gear from these vendors. In Warframe, unique mods and are available after hundreds of days of logins and players, thus, have little agency in obtaining these rewards but must simply wait for them.

Another example of a gamified system are minion systems, which are remarkably similar across a number of MMO games such as WoW, RIFT (2011) and Secret World: Legends (2017). They are reliant on real-world driven minigames, matching symbols and types, which many players do not like engaging with. This can be seen in both WoW and RIFT as they allow player-made user interface add-ons; "Masterplan" (ctxfox, 2019) for WoW and "Minion Sender" (_ForgeUser5747423, 2016) for RIFT. These addons auto-select the correct minions, bypassing

the minigame. Players choosing to bypass sections of a system, with that system offering limited rewards and when many of which relate to itself, are clear signs of a gamified system.

One incident in particular occurred on April 1st 2016, some 18 months after the WoW minion system was added to the game when the author of "Masterplan" added an April fool's joke to his add-on. To access the minion system on that April 1st players had to solve a simple puzzle drawn from the minigame. Many of the add-on's users were simply unable to do so as they had always used the add-on and had no idea how to actually play the minigame. The fan reaction in the comments foxlit (2016) was highly negative.

Advancement systems can also be categorised in some cases as social. This is not referring to the need for players to participate in group content to advance, but that in these cases another player's advancement can allow a given character to advance. Examples of this are crafting systems, creating both gear and improvements, "enchantments", which can be placed on gear. Warframe, by contrast, has no shared crafting but allows trading of parts and some finished items between players and hence this trading system also can be defined as a social advancement system.

ANALYSIS

The advancement systems of WoW are almost entirely vertical. A major focus of the game is the constant advancement of the character's gear and, for "modern" WoW the current expansion's advancement mechanics. Gear "ilevel" being visible to players gives them a direct and directly visible measure of power, and both the previous – Legion – expansion's "Legendary Weapon" and the current BfA "Heart of Azeroth" systems both have explicit levels with their own advancement currency. In addition, mechanics such as the random gear improvements, scaling rewards from the world quests system and the "catch up" gear for major patches ensure that players can always feel rewarded in vertical advancement from play.

World quests do provide a form of horizontal advancement, in that they lead to players having to revisit the expansion zones, but this is an exception in WoW. In WoW Classic the focus on primary advancement is even more sharply defined as there are no expansion-specific mechanics or world quests to distract from the advancement via gear acquisition.

Examining WoW BfA, ten advancement systems can be identified; levelling, gear, Titanforging, crafting (including enchanting), reputations, Heart of Azeroth, questing, questing – War Campaign, minion and world quest. As discussed these systems with the exception of the world quest system are vertical in orientation, with world quests being mixed.

Levelling and Questing are initial advancement. Levelling is limited by both experience and availability, rewarding the player on a scale of hours, with a fixed interval of rewards. Questing is similar, but is limited only via availability.

Crafting and gear are primary advancement. Crafting is a social system limited by grinding, resource and time, rewarding the player on a scale of weeks and on a variable ratio. Gear is limited by time and availability, rewarding the player on a scale of days during levelling and weeks during the end game, with a variable interval of rewards.

The remaining six advancement systems are alternate advancement. Titanforging is limited by grinding and time, rewarding the player on a scale of days with a variable interval of rewards. Reputations are limited by grinding and availability, rewarding the player on a scale of weeks with a fixed interval of rewards. The Heart of Azeroth is limited by currency and availability, rewarding the player on a scale of weeks with a fixed interval of rewards. The war campaign's questing is limited by only availability, rewarding the player on a scale of hours with a fixed interval of rewards. The gamified minion system is time limited, rewarding the player on a scale of hours with a variable interval of rewards. Finally, the world quest system is time limited, rewarding the player on a scale of hours with a variable interval of rewards.

It can be seen from this that the most common limits in WoW BfA are grinding, time and availability, rewarding the player primarily over a scale of hours and with a mixture of fixed and variable intervals rewards.

Examining WoW Classic, eight advancement systems can be identified; levelling, gear, crafting (including enchanting), reputation, questing during levelling, questing during the endgame, abilities and weapon skill. These are all vertical advancement systems.

There are four initial advancement systems. They all reward the player on a scale of hours, with a fixed interval of rewards. Levelling is limited by experience, Questing while Levelling is limited by availability, abilities are limited by experience and currency and weapon skill is limited by grinding.

Crafting, gear and reputation are primary advancement. Crafting is a social system limited by grinding, resource and time, rewarding the player on a scale of weeks and on a variable ratio. Gear is limited by time and availability, rewarding the player on a scale of days during levelling and weeks during the end game, with a variable interval of rewards. Reputation is limited by grinding, capping and availability, rewarding the player over months with a fixed interval of rewards.

The only specifically endgame system are endgame missions, limited by availability and rewarding the player over weeks with a fixed interval of rewards.

It can be seen from this that the most common limits in WoW Classic are grinding, time and availability, rewarding the player primarily over a scale of hours or weeks and almost all provide rewards on a fixed ratio.

Two other systems for expansions between WoW Classic and BfA have been examined in this paper. The gating of Burning Crusade (2007) is an alternate advancement system, vertically orientated, limited in different parts by grinding, time, capping and availability, rewarding the player on a scale between days and weeks with a fixed interval of rewards. The legendary weapon system of Legion (2016) is an alternate advancement system, vertically orientated, limited by grinding, currency and time, rewarding the player on a scale between days and weeks with a fixed interval.

Examining these together, it is notable that the initial advancement systems abilities and weapon skill systems in WoW Classic have been removed in BfA, but BfA has six alternate advancement systems to only one in WoW Classic. In addition, rewards are on average given more frequently by systems in BfA which also has more systems granting rewards at an interval. WoW Classic does not have any gamified systems, whereas BfA has a minion system.

The advancement systems of GW2 are primarily horizontal. There are two major reasons for this. Firstly, they scale players down to the level of the area. Level progression does not make areas trivial for a higher level character and thus the entire game world and the variety of content thus remains relevant far longer than in vertical progression systems.

Secondly, the primary means of progression, gear, rapidly peaks for most characters, with only very minor long-term goals. To directly compare, as stated previously there has been consistent 6% increase in power level from exotic to legendary gear in GW2, versus the 40%+ increase within a single expansion's "raid" content for WoW BfA.

There are certainly some vertical systems such as Mastery, but the major effects of Mastery are concentrated in the lower ranks and are relatively easy to obtain. In the same way, the "agony resistance" system is very vertical in nature. However, it is relatively easy to obtain the effective maximum in this system and that some players choose to engage in a far higher grind, as player-created emergent content, does not change the overall orientation of GW2's progression.

Examining GW2, eleven advancement systems can be identified; levelling, gear separately for levelling and endgame, crafting (including enchanting) also split between levelling and endgame, the repeat-experience, login, currencies, agony resistance, specialization and mastery systems.

GW2 has four initial advancement systems. Levelling is horizontal in orientation due to the level scaling, limited by experience and availability and rewarding the player over hours with a fixed interval of rewards. The gear system during levelling is horizontal and limited by grinding, rewarding the player over hours with a variable interval of rewards. The social crafting system during levelling is horizontal and limited by level, grinding, resource and currency, rewarding the player over hours to weeks with a fixed interval of rewards. Specializations are vertical, limited by conditional experience and grinding, rewarding the player over hours with a fixed interval of rewards.

There is only one primary advancement system, currencies. This is a horizontal system, limited for different currencies by a mix of conditional experience, grinding, time and capping, and which rewards the player for the varied currencies between hours and months, with a fixed interval of rewards.

There are six alternate advancement systems. The gear system during the endgame is vertical and limited by grinding and time, rewarding the player over months with a variable interval of rewards. The social crafting system during the endgame is horizontal and limited by grinding, resource, currency, rewarding the player over weeks to months with a fixed interval of rewards. The repeat-experience system is horizontal, limited by grinding, rewarding the player over hours with a fixed interval of rewards. The gamified login system is vertical, limited by time, rewarding

the player over days for minor rewards and over months for major rewards with a fixed interval of rewards. Agony resistance is vertical, limited by grinding, rewarding the player over days with a fixed interval of rewards. Finally, the mastery system is vertical, limited by conditional experience, rewarding the player over days with a fixed interval of rewards.

The advancement systems of Warframe are mixed in orientation. There are several horizontal advancement mechanics, the primary one of these being the “Mastery Rank” which is only raised when levelling new pieces of gear (weapons, warframes, etc). This encourages experimentation and new types of play. In addition, to obtain the resources for building gear, resources must also be obtained from different planets and game modes, encouraging the player to engage with a wide range of environments across the game.

At the same time, the “Forma” and mod systems act to encourages players to focus specifically on a few pieces and types of gear via providing a vertical progression path. The mod system has both an acquisition cost via various means and a scaling currency cost to progress, and the “forma” system requires players to re-level gear repeatedly to fit more powerful mods. There are also openly vertical AA systems, such as the Focus system, which is designed for long-term advancement. However as re-levelling gear and focus are experience-linked, almost any in-game mission will advance a character.

These systems, and others, interact in complex ways to create a system where a character can typically be advanced in multiple ways at the same time, hence the designation of the game as “mixed” in verticality.

Examining Warframe, sixteen advancement systems can be identified; gear level, re-levelling gear, mod acquisition, mod levelling, resources, currencies, blueprints, crafting, arcanes, mastery rank, reputations, story quests, focus, rivens, seasonal activity and login rewards.

Mod acquisition and story quests can be classed as initial advancement. Mod acquisition is horizontal, limited by grinding, rewarding the player over hours to days on a fixed interval of rewards. Story quests are vertical, limited by level and availability and rewarding the player over hours with a fixed interval of rewards.

Six systems are primary advancement. Re-levelling gear (using forma) is a vertical system, limited by grinding and rewarding the player over days with a fixed interval of rewards. Both currencies and resources are horizontal, rewarding the player over hours with a variable interval of rewards. However, currencies are limited by currency and grinding while resources are limited by resources and grinding. Crafting is a horizontal system, limited by time and resources and rewarding players over days with a fixed interval of rewards.

Many blueprints many of these can be traded between players, making this a social system. It is horizontal, various individual blueprints are limited by levels, currencies, resources or grinding and rewarding the player over hours to days with a variable interval of rewards. Mastery Rank is a vertical system, limited by conditional experience and time, rewarding the player over weeks with a fixed interval of rewards.

The remaining eight systems are alternate advancement. Re-levelling gear, a vertical system, is limited by grinding and rewards the player over days with a fixed interval of rewards. Levelling mods is also vertical and is limited by currency, rewarding the player over hours with a fixed interval of rewards. Arcanes are both horizontal and vertical, limited by grinding and time and rewarding the player over days with a fixed interval of rewards. Reputations are vertical, limited by conditional experience and rewarding the player over weeks with a fixed interval of rewards.

Focus is a vertical system, limited by conditional experience, rewarding the player over days with a fixed interval of rewards. Rivens are a horizontal system, limited by time and grinding, rewarding the player over days with a fixed interval of rewards. Seasonal activity is vertical, limited by currency and time, rewarding the player over days with a fixed interval of rewards. The login reward system, finally, is vertical and limited only by time. Minor rewards are daily, while major rewards are over months. The interval of rewards is fixed.

This diversity of advancement systems, massively mixed together may seem overwhelming, and indeed the vast amount of system diversity is commonly noted about Warframe (Marshal, 2019) However, almost all the systems are fixed reward – players can generally chose what they are working for and achieve it without uncertainty, even when for instance some less accessible gear may take months to work though the various game systems to be acquired.

CONCLUSION

In the introduction, I discussed Altizer & Zagal (2014) and the need to classify advancement systems, which I believe this dissertation has done by using a range of criteria. These include both existing terms such as the horizontal or vertical orientation of progression and gamification, and new terms such as the three identified types of advancement systems (IA, AA and PA) and the eight identified limits on these advancement systems.

This study is by no means comprehensive, being primarily based on the three games selected as case studies but this paper has identified some patterns with even between the relatively limited number of case studies which possess very different overall orientations of progression and business models. Specifically, a wide variety of combinations of orientation, limits, reward interval and type can be observed. A few common patterns in games and type of systems are also identifiable.

For instance, the limits are very similar in related types of system between different games – level systems are always limited by experience, crafting systems by grinding, questing by availability and more. Some games add additional limits to these systems, but a common core of limits exists.

Also specifically, and relevant to retention, all the games studied have systems displaying the intrinsic vertical goals identified as necessary by (Bartle, 2003) with even the primarily horizontally-orientated Guild Wars 2 offering a “Mastery” system which was described by its designers (Cox & Hughs, 2015) as being added to fill this need. All three studied games also display a significant design investment in Brown’s (2013) endgame, with multiple primary and alternate advancement systems. Even in WoW Classic, where the game design dates from 2005-2006, four of the eight identified advancement systems are active in its endgame.

Gamification is also something to address, although there is clearer data that this may be seen as a risk. Gamified systems are limited solely by time, lacking agency, and both login and minion systems have been identified as particular causes of player frustration. Gameplay-affecting gear and mods in Warframe are locked behind hundreds of days of login rewards with no other method for advancing their acquisition. This and the poor fan response to the minion system returning in WoW expansions should be a warning sign to developers. If an advancement system cannot be integrated into the game the question must be asked if it is a positive for players, or even indeed useful for retention.

This is an area where further and broader study is worthwhile. This study was focused on establishing the system of classification and has included only three case studies from major, successful, games in the MMO genre. A wider study which included less successful games,

including commercial failures, could be used to establish if there is significance to patterns of gameplay systems which indicate commercial success, or if indeed successful games advancement system's orientation is linked to their business model – for instance, do subscription models like WoW lend themselves to vertical progression and constantly gaining character power?

It is unfortunate that financial data for many MMO games is treated as private data by MMO companies. The data provided by Woodcock (2006) is perhaps the last good snapshot of subscriptions but is now over a decade old. It would greatly aid further analysis if subscriptions and revenues of MMO games were known, both between games and in particular when comparing WoW Classic and BfA; the relative popularity of the WoW versions could inform many decisions by MMO researchers and developers.

In any event, this study has successfully established a taxonomy for classifying advancement structures in MMO games, identifying the key factors which define said systems and providing the work which Altizer & Zagal (2014) identified in their conclusion as a key need in advancing the understanding of advancement mechanics.

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Appendix B – World of Warcraft, Burning Crusade Expansion Gating

